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RESEARCH MEMORANDUM

for the

Air Materiel Command, U. S. Air Force

AN INVESTIGATION OF THE MCDONNELL XP-85 AIRPLANE

IN THE AMES 40- BY 80-FOOT WIND TUNNEL.-

PRESSURE-DISTRIBUTION TESTS

By Lynn W. Hunton and Harry A. James

Ames Aeronautical Laboratory Moffett Field, Calif.

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SUMMARY

Pressure measurements were made during wind-tunnel tests of the McDonnell XP-85 parasite fighter. Static-pressure orifices were located over the fuselage nose, over the canopy, along the wing root, and along the upper and lower stabilizer roots. A total-pressure and static-pressure rake was located in the turbojet engine air-intake duct. It was installed at the station where the compressor face would be located. Pressure data were obtained for two airplane conditions, clean and with skyhook extended, through a range of angle of attack and a range of yaw.

INTRODUCTION

At the request of the Air Materiel Command, U. S. Air Force, the aerodynamic characteristics of the McDonnell XP-85 airplane have been investigated in the Ames 40- by 80-foot wind tunnel. The investigation consisted of two parts: (1) The determination of the force and moment characteristics and (2) the measurement of both the distribution of pressure over portions of the airplane and the air-flow characteristics in the fuselage duct. The results of the first part of the investigation are given in reference 1 and reported herein in tabular form are the results of the second part.



SYMBOLS AND COEFFICIENTS

For these tests the angular displacements of the airplane are referred to the wind axes as shown in figure 1. The coefficients and symbols are defined as follows:

P pressure coefficient
$$\left(\frac{p_l p_0}{q_0}\right)$$

 $\frac{H_l-p_0}{H_l-p_0}$ ram-recovery ratio

$$\frac{\underline{v_{1}}}{v_{o}} \qquad \text{inlet velocity ratio } \left(\frac{\underline{H_{1}-p_{o}}}{\underline{H_{o}-p_{o}}} - \underline{P} \right)$$

- angle of attack of fuselage thrust axis, corrected to freestream conditions, degrees
- ♥ angle of yaw, degrees

wing mean aerodynamic chord
$$\left(\frac{\int_0^{b/2} e^{2dy}}{\int_0^{b/2} e^{dy}}\right)$$
, 5.15 feet

- H total pressure, pounds per square foot
- p static pressure, pounds per square foot
- q stream dynamic pressure $(\frac{1}{2}pV^2)$, pounds per square foot
- V stream velocity, feet per second
- ρ mass density of air, slugs per cubic foot

Subscripts

- l local
- o free stream



DESCRIPTION OF THE AIRPLANE AND APPARATUS

The McDonnell XP-85 airplane is a parasite fighter designed to operate from a B-36 airplane. The airplane is characterized by swept-back wings and an unorthodox five-unit tail and is powered by a turbo-jet engine. A three-view drawing of the airplane with pertinent dimensions is shown in figure 2. A more complete description of the airplane can be found in reference 1.

The installation of the airplane in the tunnel test section is shown in figure 3. The only modification to the airplane made for these wind-tunnel tests was the replacement of the turbo-jet engine and tail pipe in the fuselage with a straight circular duct of constant cross section (approximately 21 in. diameter). The aft end of the tail pipe was capped with an annular plate which reduced the exhaust area by approximately 30 percent.

Static-pressure orifices were located at the root of the right wing, at the root of the upper-right and lower-right stabilizers, and over the nose and canopy of the fuselage as shown by the diagram of figure 4. The exact location of each orifice, except those in the duct, is given in table 1. The orifices on the wing and stabilizers were located only on the upper surface of the respective sections. All orifices were flush with the airplane skin except those over the stabilizer roots where pressure belts were used. For the pressure survey of the duct a rake containing total—and static-pressure tubes was installed, as shown in figure 4, at a station corresponding to the location of the face of the compressor of the turbo-jet engine.

TESTS, RESULTS, AND DISCUSSION

Pressure—distribution data were obtained through a range of angles of attack at fixed angles of yaw and a range of angles of yaw at fixed angles of attack. The major portion of the data was obtained at a tunnel airspeed of about 155 miles per hour (60 lb/sq ft dynamic pressure). This gave a Reynolds number of 7.4 × 105 based on the M.A.C. of 5.15 feet. In a few instances the test dynamic pressure was reduced to 25 pounds per square foot in order to obtain values of peak negative pressures. Two conditions of the airplane were investigated: clean and with skyhook extended. However, data from the rake in the duct were not taken with the skyhook extended since the extension could not alter the flow in the duct.



The static-pressure data obtained are presented as pressure coefficients P. The total-pressure data (from the rake in the duct) are presented as values of ram-recovery ratio (H_l-p_0/H_0-p_0) . No corrections have been applied to the data.

Table 2 is a listing of the test conditions and shows in which of the succeeding tables the data for a particular test condition can be found. Tables 3 through 8 include the data obtained from tests of the airplane in the clean condition. Tables 9 through 14 include the data obtained from tests of the airplane with skyhook extended. The values of pressure coefficient obtained at reduced tunnel speed are included in table 3(a) and so marked. Where the pressure coefficient exceeded that measurable at the higher test speed, the orifice was sealed and thus no value appears in the tables. Values of pressure coefficient or ram—recovery ratio which are presented but are considered doubtful because of partial leaks or plugs in the pressure line have lines drawn through them. With the exception noted below all other values are believed correct.

Computation of the intake velocity ratio at which the air—intake system operated gave improbable values. The total—pressure tubes indicated almost 100—percent ram recovery and this is believed to be correct. However, three of the static—pressure tubes had very high readings indicating a velocity ratio of 0.28. The fourth had a very low reading indicating a velocity ratio of 0.97. A calculated value of velocity ratio, assuming reasonable duct losses, was 0.80. A re—examination of the data and computations revealed no explanation for the discrepancy. Checks made during the test showed no plugs or leaks in the static tubes or leads. It can only be concluded that the tubes were not indicating true static pressure.

Ames Aeronautical Laboratory,
National Advisory Committee for Aeronautics,
Moffett Field, Calif.

REFERENCE

1. Hunton, Lynn W., and James, Harry A.: An Investigation of the McDonnell XP-85 Airplane in the Ames 40- by 80-Foot Wind Tunnel.— Force and Moment Tests. NACA RM No. SA8I23, U. S. Air Force, Sept. 27, 1948.

TABLE 1.- LOCATION OF PRESSURE ORIFICES

(a) Wing root

Ori- fice No.	Per- cent chord
27 28 29 30 31 32 33 34 35 37 38	0 1.25 2.5 7.5 15 25 25 35 45 60 66 75 85

(b) Upper stabilizer root

77761	1000
Ori- fice No.	Per- cent chord
77 76 77 73 71 70 68 67	0 2.5 5 10 20 30 40 50 60 70 85

(c) Lower stabilizer root

Ori-	Per-
fice	cent
No.	chord
87 86 85 83 81 80 78 78	0 5 10 20 30 40 50 78 78



TABLE 1 .- CONCLUDED

(d) Fuselage and canopy

Ori- fice No.	F.S.ª	B.L. ^b	W.L.C	Ori- fice No.	F.S. ^a	B.L.b	W.L.C
1 2 34 56 78 90 11 2 34 56 78 90 12 34 56 78 90 12 34 56 39	-0.8 0.2 5.0 10.0 15.0 20.0 30.0 40.0 52.8 61.0 69.0 74.0 79.0 87.0 91.0 74.0 78.0 87.0 91.0 87.0 91.0 91.0 87.0 91	333333333333333333333333333333333333333		412345678901234567890123456	2.7 5.8 9.0 11.8 15.0 30.0 9.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15		75777000000000000000000000000000000000

Euselage station, longitudinal distance from plane located 0.8 in. behind the face of the fuselage nose, in inches.

b Buttock line, lateral distance from plane of symmetry, in inches.

C
Water line, vertical distance from thrust axis, in
inches.



TABLE 2.- SUMMARY OF TEST CONDITIONS

Table No.	Angle-of- attack range, a (deg)	Angle-of- yaw range, \psi (deg)	Configuration
3	_4.0 to 16.3	0	Clean
4	_4.0 to 16.3	4	j
5	-4.0 to 16.3	8	
6	0.1	-12 to 12	
7	6.2	-12 to 12	
8	12.3	-12 to 12	↓
9	-4.0 to 14.3	0	Skyhook extended
10	_4.0 to 14.3	4	
11	_4.0 to 14.3	8	
12	0.1	-12 to 12	
13	6.2	-12 to 12	
14	12.3	-12 to 12	Ÿ

TABLE 3.— PRESSURE COEFFICIENTS FOR THE AIRPLANE IN THE CLEAN CONDITION; ψ_{\star} 0^{O}

(a) Wing root

ori- fice No.	-4.0	0.1	4.1	8.2	12.3	14.3	16,3
27 28 29 30 31 32 33 34 35 36 37 38	0.45 19.06 1.32 1.32 1.43 1.43 1.43 1.43 1.43 1.43 1.43 1.43	476435555488 01111111111	-0.33 -1.26 89 67 65 65 57 50 42 31	-1.63 -2.29 -1.46 -1.08 90 78 73 56 44 32	82 69 61	-2.66a -4.00a -2.45 -1.59 -1.22 -1.15 97 88 76 67 54 40	-5.25 ^a -4.12 ^a -2.50 -1.56 -1.15 -1.0989837652

(b) Upper stabilizer root

ori- fice No.	-4.0	0.1	4.1	8.2	. 12 . 3	14.3	16.3
67 68 69 70 71 72 73 74 75 76 77	-0.30 -0.4 -1.13 -1.14 -2.5 -3.7 -0.3 -28 -01 70	0.05 -	- 32 - 10 - 04 - 12 - 28 - 49 - 61 - 43 - 14 - 21	- 30 - 03 - 12 - 29 - 49 - 49 - 49 - 37 - 30	-0.29 -0.09 -0.02 -10 -30 -57 -53 -50 -77 -37	-0.30 .08 03 14 33 62 57 58 88 32 43	- 29 - 06 - 04 - 16 - 36 - 59 - 59 - 59 - 96 - 47

a Test dynamic pressure reduced to 25 lb/sq ft



TABLE 3.- CONTINUED

(c) Lower stabilizer root

Ori- fice No.	_ે+•0	0.1	4.1	8.2	12.3	14.3	16.3
78 79 80 81 82 83 84 85 86 87 88	0.08 .03 03 01 01 34 .13 .18 .17	0.07 .03 06 03 04 31 .08 .13 .32	0.09 .02 09 05 08 .31 .04 .07 .65	0.10 01 12 08 12 33 02 02 02	0.10 03 15 11 15 31 05 03 90 1.00	0.08 04 16 13 18 33 09 09 89 1.00	0.06 06 18 16 21 33 13 13 18 .74 1.00

(d) Fuselage and canopy

Ori- fise No.	-4.0.	0.1	4.1	8.2	12.3	14.3	16.3.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	0.66 .55 .24 .09 .04 07 .56 .27 .14 04 50 57 42 40	0.37 .34 .08 05 09 14 17 15 .47 .20 .06 13 60 77 63 47	09 19 22 25 25 23	-0.34 13 24 32 35 35 35 39 30 30 73 73 53 48	-0.8036424653534035270216378696765549	-1.01 49 51 48 42 36 25 19 89 77 56 49	-1.20 60 54 55 50 48 42 35 .24 02 42 90 99 76 55 48



TABLE 3.- CONTINUED

(d) Fuselage and canopy (Concluded)

Ori- fice No.	<u>-4.0</u>	0.1	4.1	8.2	12.3	14.3	16.3
18	1,00	1.00	1.00	1.00	1.00	1.00	1.00
19	01	08	15	20	26	29	29
20	 57	60	 63	 63	67	66	64
21	 73	74	77	77	77	77	73
55	 58	60	 63	63	66	65	65
23	43	46	 50	52	55	 57	57
24	30	 33	37	41	44	45	47
25 26	 25 08	30 07	34 06	37 05	40 06	42 07	44 08
39	00 -45			05 -47	08	01 -42	00 .42
40	.11	.12	.10	.07	.01	01	01
41	•03	-05	•03	.01	06	09	10
42	04		04	08	15	18	19
43	11	10	12	16	23	26	27
44	48	43	 43	47	55	 58	62
45	24	-,22	24	29	 38	41	41
46	17	18	24	32	45	50	51
47	01	13	 32	 53	80	91	94
48	12	31	55	77	-1.03		-1.07
49	08	07	06	05	06	07	08
50	18	.14	•08	.01	09	13	15
51 50	06	.04	03	09	16	20	21
52 53	01 08	03	07	12	21	 25	27
54	08	10	14 06	1 9	 28	 32 ·	
55	-54	.41	06	05 .10	06 -61	07 19	08 23
56	.23	.13	.02	10	25	 30	 34
57	.03	03	10	17	28	•33	 34
58		02	09	17	28	 33	35
59	07	11	18	26	27	41	42
60	15	18	25	 33	43	48	49
61	•39	.50	.58	.65	•68	.68	.70
62	.05	.11	.16	.18	.17	.16	.18
63	.01	.06	•09	.10	•04	•05	•05
64	07	03	03	03	09	11	11
65 66	19	10	09	10	14	16	17
00	20	17	17	19	25	27	i 27



TABLE 3.- CONTINUED

(e) Fuselage duct

Ori- fice No.	<u> </u> .0	0.1	4.1	8.2	12.3	14.3	16.3
100 T.a 101 T. 102 T. 103 T. 104 T. 105 T. 106 T. 107 T. 108 T. 110 T. 111 T. 112 St.b 113 T. 114 T. 115 T. 116 T. 117 T. 118 T. 120 T. 121 T. 122 T. 123 T. 124 T. 125 St. 127 T. 128 T.	0.93 .95 .99 1.00 1.00 .97 .99 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0.95 .97 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	1.00 •97 •95	0.97 .98 .97 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	.98 1.00 1.00 .96 .95 1.00 1.00 1.00 1.00 1.00 1.00	.95 .95 1.00 1.00 1.00 .94 .89 .66 1.00 1.00	0.97 .99 .99 1.00 1.00 1.00 1.00 1.00 1.00 1

^aT. indicates total-pressure tube (ram-recovery ratio, $\frac{H_{l}-p_{0}}{H_{0}-p_{0}}$).

bSt. indicates static-pressure tube (coefficient given as P).

TABLE 3.- CONCLUDED

(e) Fuselage duct (Concluded)

a Ori- fice No.	-4.0	0.1	4.1	8.2	12.3	14.3	16.3
129 T. a 130 T. 131 T. 132 T. 133 T. 134 T. 135 T. 136 T. 137 T. 138 St. 139 T. 140 T. 141 T. 142 T. 144 T. 145 T. 146 T. 147 T. 148 T. 149 T. 150 T. 151 St.	1.00 1.00 .93 .96 1.00 1.00 1.00 1.00 .89 .93 .99 .92 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 .96 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	.94 1.00	1.00 1.00 .91 .97 .99 1.00 1.00 .93 .99 .94 1.00 1.00 1.00 1.00 1.00	1.00 1.00 .90 .97 .98 1.00 1.00 1.00 .93 .97 1.00 1.00 1.00 .94 .88	1.00 1.00 .89 .97 .98 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	1.00 1.00 .89 .97 .98 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0

^aT, indicates total-pressure tube (ram-recovery ratio, $\frac{H_l-p_o}{H_o-p_o}$).

bSt. indicates static-pressure tube (coefficient given as P).



TABLE 4.- PRESSURE COEFFICIENTS FOR THE AIRPLANE IN THE CLEAN CONDITION; ψ , μ^{O} .

(a) Wing root

) MITTER T				
α Ori- fice No.	¹ 4.0,	0.1	4.1	8.2	12.3	14.3	16.3
27 ² 28 ³ 29 30 31 32 33 34 35 36 37 38	0.46 .04 06 22 27 37 43 43 39 39 39 38	0.25 50 55 55 55 55 55 55 5	-0.58 -1.50 -1.04 86 74 78 70 67 53 44 33		-2.37 -1.57 -1.22 -1.15 86 86 65 49		

(b) Upper stabilizer root

Ori- fice No.	-4.0	0.1	4.1	8.2	12.3	14.3	16.3
67 68 69 70 71 72 73 74 75 76	-0.04 .10 .00 11 27 49 21 30 38 .00	-0.04 .12 .01 08 26 54 31 41 62 .37	-0.04 14 01 09 25 56 35 50 85 52	-0.04 .15 .00 -10 -26 -57 44 60 -1.05 .54	-0.04 .14 .01 12 28 59 54 69 -1.27	-0.05 .13 .01 15 31 62 60 75 -1.38 .37	-0.06 .10 .02 20 35 64 66 81 -1.46

^aPeak negative pressures exceeded limit of manometers for $\alpha > 12^{\circ}$. Note: Lines have been drawn through doubtful data.

TABLE 4.- CONTINUED

(c) Lower stabilizer root

Ori- fice No.	-4.O	0.1	4.1	8.2	12.3	14.3	16.3
78 79 80 81 82 83 84	0.08 .04 04 02 03 37	0.11 .04 04 02 04 38	0.11 .03 08 05 09 38	0.11 .01 11 07 11 38	0.12 01 12 09 14 38 36	0.10 03 13 12 16 39	0.06 05 16 15 20 11
85 86 87 88	.08 .12 .30	.02 .05 .65	02 .01 .85 -1.00	04 03 .80	06 05 .73 00	09 11 .72 1.00	18 26 -57 -1.00

(d) Fuselage and canopy

					·		
Ori- fice No.	-4.0	0.1	4.1	8.2	12.3	14.3	16.3
	0.55 .46 .19 .04 01 11 .53 .25 .12 57 57 59 43	0.27 .26 .04 08 13 17 19 18 .04 15 61 61 49 48	-0.07 .03 21 25 27 26 .11 25 27 26 25 27 26 25 27 25 25 25 25 25 25 25 25	-0.46 17 26 34 31 36 31 32 51 51 51	-0.96 43 447 45 45 45 45 46 20 19 89 51 51	-1.16 56 51 52 48 42 37 .18 02 21 43 91 1.02 80 59 53 53	-1.28 64 55 55 55 50 49 42 37 .16 03 45 94 80 59 52 1.00
19 20 21 22	94 72	25 86 94 73	32 88 96 75	36 88 95 75	42 89 95 75	43 88 93 75	42 84 90 74



TABLE 4.- CONTINUED

(d) ruserage and canony (concrude)	(d	.) Fuselage	and canopy	(Concluded)
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	(a) rus	(d) Fuselage and canopy (Concluded)							
Ori- fice No.	-4.0	0,1	4.1	8.2	12.3	14.3	16.3		
234 56 90 1 2 34 456 78 90 1 2 3 5 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6		-0.52 -0.36 -0.27 -0.08 -0.07 -0.05 -0.07 -0.05	55 32 10 18 57 35 32 37 16 27 16 27 20 30 20 30 20 30 20 -	-0 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	36 14 19 28 35 48 53 39 33 39 42 38 42 39 42 42 43 46 46 23 46 23 27	08 .1520233037705058 -1.00 -1.190831333742424442	58 98 -1.09 11 33 35 38 43 11 52		





TABLE 4.- CONTINUED

(e) Fuselage duct

		(6) 10	werake.				
Ori- fice No.	- 4.0	0.1	4.1	8.2	12.3	14.3	16.3
100 T. a 101 T. 102 T. 103 T. 104 T. 105 T. 106 T. 107 T. 108 T. 110 T. 112 St. b 113 T. 114 T. 115 T. 116 T. 119 T. 120 T. 121 T. 122 T. 123 T. 124 T. 125 St. 127 T. 128 T. 131 T. 132 T. 131 T. 132 T. 131	0.96 96 96 1.00 98 1.00 99 1.00 1.00 1.00 1.00 1.00 1.00 1	0.93 .96 1.00 1.00 .96 .99 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0.94 977 1.00 1.00 9.00 1.00 9.00 1.00 9.00 1.00 9.00 1.00 9.00 1.00 9.00 1.00 9.00 1.00 9.00 1.00 1	0.94 98 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	0.95 .96 .99 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0.94 .98 .90 .90 .90 .90 .90 .90 .90 .90	0.0000000000000000000000000000000000000

at. indicates total-pressure tube (ram-recovery ratio, $\frac{H_{1}}{H_{0}}$ $\frac{-p_{0}}{-p_{0}}$).

bSt. indicates static-pressure tube (coefficient given as P).

Note: A line has been drawn through doubtful data.



TABLE 4.- CONCLUDED

(e) Fuselage duct (Concluded)

ori- fice No.	-4.0	0.1	4.1	8.2	12.3	14.3	16,3
138 St.b 139 T.a 140 T. 141 T. 142 T. 143 T. 144 T. 145 T. 146 T. 148 T. 149 T. 150 T. 151 St.	0.89 .93 .99 .90 1.00 1.00 .95 .99 1.00 1.00	0.89 94 99 .93 1.00 1.00 1.00 .96 .99 1.00 1.00	0.89 .93 .93 1.00 1.00 .92 .96 .99 1.00 1.00	0.89 .95 1.00 .93 1.00 1.00 1.00 .97 .99 .99 .99	0.89 .95 1.00 .93 1.00 1.00 1.00 1.00 1.00	0.88 94 1.00 .93 1.00 1.00 1.00 1.00 1.00	0.85 .98 .99 .99 .99 .99 .99 .99 .99 .99 .99

^aT. Indicates total-pressure tube (ram-recovery ratio, $\frac{H_{\overline{l}} - p_0}{H_0 - p_0}$).

bSt. Indicates static-pressure tube (coefficient given as P).



TABLE 5.— PRESSURE COEFFICIENTS FOR THE AIRPLANE IN THE CLEAN CONDITION; ψ , 8^{O}

(a) Wing root

a Ori- fice No.	-4.0	0.1	4.1	8.2	12.3	14.3	16.3
27 ^a 28 ^a 29 30 31 32 33 34 556 37 38	0.43 12 18 31 34 42 43 47 48 42 37 29	0.06 83 65 57 59 59 59 49 42 32	-1.02 -1.82 -1.21 96 81 82 73 68 60 54 44	-2.80 -3.04 -1.88 -1.33 -1.06 -1.04 88 68 61 47 35	-2.50 -1.65 -1.27 -1.20 99 88 74 65 50		-2.53 -2.38 -1.14 -1.24 -1.14 -1.06 93 86 70 60

(b) Upper stabilizer root

Ori- fice No.	-4. 0	0.1	4.1	8.2	12.3	14.3	16.3
67 68 69 70 71 72 73 74 75 76 77	-0.04 .07 .02 10 31 65 41 52 81 .39	-0.04 .12 .00 10 30 68 49 63 -1.11 .49	-0.04 .17 03 12 32 67 61 74 -1.35 .44	-0.04 08 06 15 35 71 72 87 64 .26	-0.03 -06 -05 -14 -34 -71 -73 -89 -1.72 -19	-0.04 .01 09 19 37 77 80 -1.01 -1.97 07	-0.04 -01 10 20 38 78 82 -1.04 -2.03 93

Peak negative pressures exceeded limit of manometers for $\alpha \ \overline{>} 12^{\text{O}}_{\bullet}$

TABLE 5 .- CONTINUED

(c) Lower stabilizer root

Ori- fice No.	-4.0	0.1	4.1	8.2	12.3	14.3	16.3
78 79 80 81 82 83	0.11 .04 04 02 04	0.12 .04 05 03 06	0.13 .04 07 08	0.12 .01 10 07 12	0.12 .02 10 07 12	0.10 01 11 09 13	0.07 03 11 11 17
81 ₄ 85 86 87 88	37 35 .04 .08 .50	36 35 -00 -04 -70	36 34 02 .02 .68 1.00	35 05 01 64	36 34 05 01 -65 1.00	-37 -36 -12 -13 -66 1.00	37 35 19 31 .39 1.00

(d) Fuselage and canopy

α Ori- fice No.	-4.0	0.1	4.1	8.2	12.3	14.3	16.3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	0.45 .38 .12 .00 09 12 18 18 18 18 19 14 58 68	0.14 .17 .02 .20 .20 .25 .41 .05 .27 .29 .70 .89 .75	-0.20 06 17 26 30 32 32 32 33 13 32 78 79	-0.64 -29 -34 -41 -42 -40 -37 -26 -22 -42 -89 -1.86	-1.03 51 45 50 48 49 40 19 27 48 95 -1.08 87	-1.23 63 51 53 50 45 40 29 50 96 -1.09 87	-1.44 74 58 53 52 45 40 11 32 52 -1.00 -1.11 87



TABLE 5.- CONTINUED

(d) Fuselage and canopy (Concluded)

K							
Ori- fice No.	-4.0	0.1	4.1	8.2	12.3	14.3	16.3
16 17		-0.60 57	-0.62 60	-0.67 64	-0.68 63	-0.67 62	-0.68 62
16 17 18 19 20 21 22 22 23 44 45 44 49 50 51 52	-54 -96 -42 -1.15 -86 -57 -37 -08 -20 -31 -29 -34 -28 -26 -27	-57 -58 -1.15	60 52 -1.14 59 306 295 356 376	-64 -99 -117 -157 -87 -45 -34 -35 -35 -35 -37 -39 -39 -39 -39 -39 -39	のBはおいめのするでは多かなすであるがあるまなす 「H I I I I I I I I I I I I I I I I I I I	62 99 61 1.08 83 46 35 46 37 47 57 62 1.20 46 47 57 47 47 47 47 47 44 46 46 46 46 46 46 47 47 47 47 47 47 47 46 46 46 46 46 47	6 0 6 0 5 5 8 8 4 7 7 8 4 7 9 8 9 5
53 54 55 57 58 59 61 62 63 64 65 66	32	27 35	32 34 36 32	07 56 49 45 41	07 71 57 51 47	53 50 56	12 86 65 57 52 58

Note: A line has been drawn through doubtful data.

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TABLE 5.- CONTINUED

(e) Fuselage duct

			: moerage				
Ori- fice No.	4.0	0.1	4.1	8.2	12.3	14.3	16.3
100 T. a 101 T. 102 T. 103 T. 104 T. 105 T. 106 T. 107 T. 108 T. 110 T. 111 T. 112 St. 113 T. 114 T. 115 T. 118 T. 119 T. 120 T. 121 T. 122 T. 123 T. 124 T. 125 St. 127 T. 128 T. 127 T. 130 T. 131 T. 132 T. 134 T. 135 T. 136 T. 137 T.	0.91 .95 .96 1.00 1.00 .97 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	0.93 .97 .98 1.00 1.00 .97 .99 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0.92 .95 .90 .90 .90 .90 .90 .90 .90 .90 .90 .90	0.93 .94 .99 1.00 1.00 .96 .94 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	0.91 .93 .97 .99 1.00 .95 .90 1.00 .91 .63 .98 .98 .98 .98 .98 .98 .98 .98 .98 .98	9999988998899884347769976666666665442976665588984888888888888888888888888888888	0.97 0.97 0.93 0.97 0.93 0.97 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93
	<u> </u>	1		1	1		1

^aT.indicates total-pressure tube (ram-recovery ratio, $\frac{H_1-p_0}{H_0-p_0}$). bSt.indicates static-pressure tube (coefficient given as P). Note: A line has been drawn through doubtful data.

TABLE 5.- CONCLUDED

(e) Fuselage duct (Concluded)

a Ori- fice No.	-4.0	0.1	4.1	8•2	12.3	14.3	16.3
138 St.b 139 T.a 140 T. 141 T. 142 T. 143 T. 144 T. 145 T. 146 T. 147 T. 148 T. 149 T. 150 T.	0.89 .95 1.00 .93 1.00 1.00 1.00 1.00 1.00 1.00	0.89 .95 1.00 .94 1.00 1.00 .93 .97 1.00 1.00	0.89 9.99 9.99 9.99 9.99 9.99 9.99 9.99	0.88 .95 1.00 .94 1.00 1.00 1.00 .98 1.00 1.00	0.86 .94 1.00 .93 1.00 1.00 1.00 .93 .97 1.00 1.00	0.68 .98 .98 .98 .99 .99 .99 .99 .99 .99 .9	0.58 .89 .96 .92 .86 .97 .86 .97 1.00 1.00 1.66

T.indicates total-pressure tube (ram-recovery ratio, $\frac{H_1-p_0}{H_0-p_0}$).

bSt.indicates static-pressure tube (coefficient given as P).

TABLE 6.— PRESSURE COEFFICIENTS FOR THE AIRPLANE IN THE CLEAN CONDITION; α , 0.1° (a) Wing root

ψ Ori- fice No.	-12	- 8	<u></u> 6	<u>_1</u>	-2	0	2	4	6	8	12
27 28 29 30 31 32 33 34 35 36 37 38	0.60 .26 .13 05 14 23 28 33 29 26 21	0.57 .05 04 19 25 34 36 40 34 34 32	0.57 06 12 26 29 38 42 37 34 37 34 26	44 47 47	0.47 29 30 40 48 48 50 42 38 38	37 43 43 51 50 51 50 43 38	47 54 52 53 42 45	52 59 56 56 54 47 41		0.06 83 66 57 59 59 49 42 31	61 60 54

(b) Upper stabilizer root

vri- fice No.	-12	8	<u>-</u> -6	-4	-2	0	2	14	6	8	12
67	-0-00	-0.00	-0.01	-0.01	-0.01	-0,02	-0.11	-0.11	-0.11	-0,10	-0.10
68	 13	08	06	04		.07	.11	.12	.11	.12	.21
69	34	27	24	20	15	05	02	00	.03		04
70	27	19	19	19	16	13	12	09	09	11	12
71	 23	20	24	27	 28	27	29	28	27	30	32
72	19	24	29	 37	40	46	52	 55	57	62	68
73	.21	.17	.11	.03	 05	18	25	 33	42		68
74	.22	.08	~. 02	07	 30	51	~. 63	76	87		 83
75	•39	.27	.19	.09		26	44	 65	89		-1.58
76	-2.32	-1.24	-1.31	88	29	17	.11	.37	•45	.48	•32
77	26	-:12	03	.05	09	-,12	.16	06	.01	05	24

TABLE 6.- CONTINUED

(c) Lower stabilizer root

Ori- fice No.	-12	 8	- -6	_14	_ 2	0	2	4	6	8	12
78 79 80 81 82 83	0.03 02 08 00	0.04 02 07 03 02 30	0.04 01 07 03 02	0.05 .01 06 03 03 33	0.08 03 05 03 04 33	0.07 .03 06 03 04 31	0.08 .03 05 03 04 13	0.11 .04 04 02 04 13	0.12 .04 05 02 05 12	0.13 .04 05 03 06	0.11 .02 07 04 08 10
84 85 86 87 88	30 .28 .36 57 -1.00	30 .19 .27 22 1.00	31 .17 .23 11	32 .13 .19 .08	-:32 .11	32 .08 .13 .32	41 .07 .09 .46	41 .04 .06 .66	40 .04 .04 .74	.13 .03 .04 .71	40 .03 .05 .69

(d) Fuselage and canopy

Ori- fice No.	-12	<u></u> 8	6	_4	-2	0	2	4	6	8	12
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	0.59 .45 .06 09 13 22 27 25 25 26 23 42 87 90 78 79	0.53 .43 .09 10 17 20 19 .35 .08 27 74 89 60	0.50 .42 .10 04 08 14 19 16 .39 .13 20 20 68 71 55 53	0.46 .39 .10 05 08 14 17 16 .42 .16 .01 17 65 67 51 49	0.42 .37 .09 04 08 13 17 15 44 .19 .04 15 62 79 46	0.37 .34 .08 05 09 14 17 14 .48 .20 .06 12 60 60 47 43	0.33 .30 .07 06 11 15 17 16 .48 .19 .06 13 60 77 64 47	0.27 .26 .04 08 13 17 20 19 .47 .18 .04 15 62 62 67 51 47		0.14 .17 02 13 21 23 26 25 .41 .10 05 24 70 89 75 60 58	0.00 .05 10 21 30 31 35 33 .29 03 20 37 82 -1.03 88 75 75
18 19 20	.05 07	.99 .07 20	.06 28	.03 38	1.00 03 49	1.00 08 60	1.00 16 73	1.00 25 88		47 -1.16	95 74 -1.47

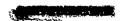


TABLE 6.- CONTINUED

(d) Fuselage and canopy (Concluded)

Ori- fice No.	-12	-8	- -6	_4	2	0	2	4	6	8	12
21 22 23 24 25 26 34 41 45 44 45 47 48 49 50 51 51 52 51 55 55 57 57 57 57 57 57 57 57 57 57 57	-0.2339997.6277384.105339936.335.255.556.5446.16	-0.38 -0.38 -0.38 -0.37 -0.38 -0.37 -0.38	-0.48 -0.43 -0	08 .62 .29 .11 .10 .00 09 .70 .29 .09	-0.55 -1.33	.05 03 42 19 14 33 06 13 06 10 19 19 19 19 19 19 19 19	358 10 10 10 10 10 10 10 10	09 09 17		-1.17 87 99 18 18 18 18 18 18 18 18	37353979999548335996444499545869387457

TABLE 6 .- CONTINUED

(e) Fuselage duct

Ori- fice No	¥	-12	-8	6	<u></u>	2	0	2	4	6	8	12
100 T		0.93	0.96	0.97	0.97	0.96	0.96	0.95	0.94	0.93	0.93	0.91
101 T		.97	.99	.98	.97	.97	.97	•97	.97	.97	.97	.94
102 T		.98		1.00						.96	.98	1.00
103 T		1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00
104 T		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
105 T		•97	.97	.97			•97		•97	.96	.96	.96
106 T	1	.94	.93	.93	•93		•93	•93		.91	.91	.90
107 T	1	1.00	1.00	1.00	1.00							.96
108 T		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
109 T		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
110 T		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
111 T		•92	.94	.94	.94	.94	.94	.94	.94	-94		•93
112 S	t.b	.88		.89		.89						.88
113 T		.67	.67	.67	.67	.67	.67					
114 T	١.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	•99		
115 T	,	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	•99
116 T		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
117 T					1.00	1.00		1.00	1.00	1.00	1.00	
118 T	١.	.94		.94			•93		•93	.92	.92	
119 T		•97	•97	•97	•97	-97	•97	.96				
120 T		1.00	1.00	1.00	1,00	1.00	1.00	1.00	1.00	•99		
121 T		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
122 T		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
123 T				1.00							1.00	1.00
124 T	7	.94	.94	•93	.93		.92				.90	.89
125 S		.03		.01								
127 T		.98			•99	.99	•99	•99		1.00		
128 T		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
129 T										1.00		
130 T										1.00		
131 T		.92	.93	•93	.92		.92					
132 T		.96		-95								
133 T		.98				-99	1.00	1.00	11.00	1.00	1.00	11.00
134 1			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
135 T										1.00		
136 T	P.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	11.00	11.00	μ.00	1.00

^aT. Indicates total-pressure tube (ram-recovery ratio, $\frac{H_l-p_o}{H_o-p_o}$).

bSt. indicates static-pressure tube (coefficient given as P).
Note: A line has been drawn through doubtful data.

TABLE 6.- CONCLUDED

(e) Fuselage duct (Concluded)

Ori- fice No.	-12	-8	6	-4	-2	0	2	4	6	8	12
137 T. b 138 St. 139 T. 140 T. 141 T. 142 T. 143 T. 144 T. 145 T. 146 T. 147 T. 148 T. 149 T. 149 T.	0.01 .88 .91 .94 .89 1.00 1.00 .99 .93 1.00 1.00	0.00 0.88 .92 .97 .91 1.00 1.00 1.00 1.00 1.00	0.01 .88 .92 .97 .91 1.00 1.00 1.00 1.00 1.00	0.01 .89 .97 .92 1.00 1.00 1.00 1.00 1.00	0.00 89 .94 .99 .92 1.00 1.00 1.00 1.00 1.00	0.00 .89 .93 .99 .93 1.00 1.00 1.00 1.00	0.00 .89 .94 1.00 .93 1.00 1.00 1.00 1.00 1.00 1.00	0.00 .89 .95 1.00 .93 1.00 1.00 1.00 1.00 1.00	0.00 .89 .94 1.00 .93 1.00 1.00 1.00 1.00 1.00	0.00 .89 .95 1.00 .94 1.00 1.00 1.00 1.00 1.00	0.00 .89 .95 1.00 .94 1.00 1.00 1.00 .98 1.00 1.00
151 St.	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88	.88

^aT. indicates total-pressure tube (ram-recovery ratio, $\frac{H_0 - p_0}{H_0 - p_0}$).

^bSt. indicates static-pressure tube (coefficient given as P).

Note: A line has been drawn through doubtful data.



TABLE 7.— PRESSURE COEFFICIENTS FOR THE AIRPLANE IN THE CLEAN CONDITION; α , 6.2°

(a) Wing root

Ori- fice No.	-12	-8	- 6	4	-2	0	2	4	6	8	12
27 28 29 30 31 32 33 34 35 36 37 38	0.19 75 55 51 -1.37 53 49 45 38 32 23	74 64 57 62 57 56 50 44 36	-1.25 85 72 63 61 59 53 46	-1.35 93 77 67 65 62 56 49 41	-1.64 -1.10 88 78 78 70 66 58 51 42	-1.71 -1.14 90 78 81 68 60 53 43	-1.82 -1.21 96 81 84 74 63 54 45	86 87 76 71 62 55 44	-2.18 -1.41 -1.07 89 89 78	-2.35 -1.51 -1.04 93 92 65 65 45	-2.60 -1.64 -1.21 97 96 82 75 58 45

(b) Upper stabilizer root

											
Ori- fice No.	-12	- 8	- 6	-1	- 2	0	2	14	6	8	12
67 68 69 70 71 72 73 74	-0.08 14 38 34 37 -:37 -:37 .08 .02	-0.07 26 25 33 41 .01 15	-0.07 03 20 21 32 42 04 30 06	-0:08 -02 -12 -17 -29 -145 -14 -38 -21	-0.08 104 07 15 29 150 27 31 34	.09 04 13 28 50 39	-0.06 -13 03 11 25 52 43 81 76	-0.06 .15 01 10 26 55 52 81 98	-0.05 -14 -00 -11 -29 -60 -56 -65	-0.05 -13 04 13 66 59 77 -1.49	-0.05 -0.08 -0.09 -1.15 -3.9 -7.6 -82 -9.99 -1.95
76 77	-1.62 06	 83	50 -14		01 -23	.27	50 24	.55	.49	.08	.00

TABLE 7.- CONTINUED

(c) Lower stabilizer root

Ori- fice No.	-12	-8	6	-4	-5	0	2	ţţ	6	8	12
78 79 80 81 82 83 84 85 86 87 88	0.02 04 10 04 40 38 .20 .27 29	12 07 07	0.04 03 12 08 09 40 38 .11 .17 .39	0.05 02 12 08 11 40 38 .08 .12 .56 1.00	0.08 .00 11 06 10 41 38 .06 .09 .66 1.00	0.09 .00 12 07 11 41 39 .02 .04 .86 1.00	0.11 .01 10 06 10 38 36 .02 .03 89 -1.00	0.12 .02 09 06 10 38 35 .00 .01 .83	0.12 .04 08 04 09 27 35 .01 .02 .75	0.13 .04 07 04 09 37 36 .01 .03 .68	0.12 .01 09 07 11 37 36 .01 .03 .66



TABLE 7.- CONTINUED

(d) Fuselage and canopy

Ori- fice No.	-12	-8	6	<u> </u>	-2	0	2	ĮĻ.	6	8	12
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 9 0 1 2 3 4 4 5 6 7 8 9 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	0.11.23.34.04.10.334.04.10.10.10.334.04.10.10.10.10.10.10.10.10.10.10.10.10.10.	0.08 -16 -28 -33 -33 -33 -33 -33 -33 -33 -33 -33 -3	0.02 0.08	- 03 - 03	27 .34 .10 08 27 76 90 54 53 58 58 59 39 39 07 .60 .19 .01 07 21 25	- 26 - 37 - 11 - 06 - 24 - 58 - 52 - 58 - 18 - 76 - 28 - 39 - 35 - 39 - 35 - 39 - 37 - 39 - 37 - 39 - 37 - 39 - 37 - 39 - 37 - 39 - 39	-0.18 -0.47 -0.28 -0.27 -0.28 -0.27 -0.28 -0.27 -0.28 -0.27 -0.28 -0.27 -0.28 -0.27 -0.28 -0.27 -0.28 -0.27 -0.27 -0.28 -0.27 -0.28 -0.27 -0.28 -0.27 -0.28 -0.27 -0.28 -0.27 -0.28 -0.27 -0.28 -0.27 -0.28 -0.27 -0.28 -0.27 -0.28 -0	0919272931273508287650505050505033	-0.32 -0.32 -0.32 -0.32 -0.33 -0	-0.41 -0.41 -14 -14 -134 -35 -36 -36 -36 -36 -36 -36 -36 -36	13 32 51 96 -1.14 81 81 82 -1.46 -1.35 65 48 34



TABLE 7.- CONTINUED

(d) Fuselage and canopy (Concluded)

Ori- fice No.	-12	-8	- -6	-4	2	q	2	4	6	8	12
50123#567890123#56	0.53 3.78 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.1	0,39 :23 :16 .07 08 .63 .29 .12 .10 .00 08 .93 .51 .38 .25 .17 .07	0.31 .17 .10 .02 07 .53 .21 .06 .04 05 13 .87 .44 .32 .18	0.22 .10 .03 04 08 .42 .13 .00 02 12 19 .80 .34 .23 .11 .04 06	0.13 .02 04 11 08 22 .04 07 08 18 24 .73 .27 .17 .04 03 12	04500 1070194 1043888870 103098	-C.04 -13 -16 -22 -09 -05 -13 -20 -19 -34 -49 -06 -11 -16 -24	-0.14 19 27 08 11 21 27 24 33 38 03 05 17 21 29	- 24 22 23 34 - 23 - 33 - 33 - 33 - 34 - 24 - 24 - 28 - 35	##DOO # 4 4 M M M M M M M M M M M M M M M M M	549 49 49 49 509 75 53 53 53 53 54 54 54 54 54 54 54 54 54 54



TABLE 7.- CONTINUED

(e) Fuselage duct

Ori- fice No:	-12	-8	- 6	-4	-2	0	2	4	6	8	12
100 T. ^a 101 T. 102 T. 103 T. 104 T. 105 T. 106 T.	0.93 .96 .99 .99 1.00	0.95 .97 .99 1.00 1.00	0.96 1.00 .99 1.00 1.00	.99 .98 1.00		0.97 .99 .97 1.00 1.00	0.96 .98 .97 1.00 1.00	0.94 .96 .98 1.00 1.00	0.93 .95 .99 1.00 1.00	0.93 .95 1.00 1.00 1.00	0.91 .92 .98 .99 1.00
107 T. 108 T. 109 T. 110 T. 111 T. 112 St.b	1.00 1.00 1.00 1.00 .93	1.00 1.00 1.00 1.00 .93 .89	1.00 1.00 1.00 1.00 94 .89 .67	1.00 1.00 1.00	1.00 1.00 1.00 1.00 -94 -89 -66	1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 94 .89	1.00 1.00 1.00 1.00 .93 .89	1.00 1.00 1.00 1.00 .93 .89	1.00 1.00 1.00 1.00 94 .88	.99 1.00 1.00 1.00 .93 .88 .64
113 T. 114 T. 115 T. 116 T. 117 T. 118 T. 119 T.	.66 1.00 1.00 1.00 1.00	.67 1.00 1.00 1.00 1.00 .94 .96	1.00 1.00 1.00 1.00 -95	1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 -95	1.00 1.00 1.00 1.00 94	.65 .99 1.00 1.00 1.00	.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 93	.97 1.00 1.00 1.00 .92
120 T. 121 T. 122 T. 123 T. 124 T. 125 St.	1.00 1.00 1.00 1.00 .93	1.00 1.00 1.00 1.00 .92 .02	1.00 1.00 1.00 1.00 .92 .02	.99 1.00 1.00 1.00 .91	.99 1.00 1.00 1.00 .92	1.00 1.00 1.00 1.00 .92	.99 1.00 1.00 1.00 .91	.98 1.00 1.00 1.00 .90	.98 1.00 1.00 1.00 .90	.97 1.00 1.00 1.00 .90	.94 .95 .99 1.00 .89
127 T. 128 T.	.96 1.00	.96 1.00	.96 1.00	.96 1.00	.96	1.00	.98	.98 1.00	.98 1.00	.99 1.00	1.00

^aT.indicates total-pressure tube (ram-recovery ratio, $\frac{H_l-p_o}{H_o-p_o}$).

bSt. indicates static-pressure tube (coefficient given as P).



TABLE 7 .- CONCLUDED

(e) Fuselage duct (Concluded)

Ori- fice No.	-12	-8	6	4	-2	. 0	2	4	6	8	12
129 T.a 130 T. 131 T. 132 T. 133 T. 134 T. 135 T. 136 T. 137 T. 138 St. 139 T. 140 T. 141 T. 142 T. 144 T. 145 T. 146 T. 147 T. 148 T. 149 T. 150 T. 151 St.	1.00 1.00 .91 .96 .97 .99 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 .96 .98 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	1.00 1.00 .91 .96 .98 1.00 1.00 1.00 .92 .97 .92 1.00 1.00 1.00 1.00 1.00	1.00 90 98 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	.1.00 1.00 .91 .96 .99 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 .91 .96 1.00 1.00 1.00 .94 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 .90 .96 .99 1.00 1.00 1.00 .94 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 .96 1.00 1.00 1.00 1.00 .94 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	1.00 1.00 .91 .97 1.00 1.00 1.00 1.00 .95 1.00 1.00 .94 .98 1.00 1.00 1.00	1.00 1.00 .97 1.00 1.00 1.00 1.00 .95 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0

^aT, indicates total-pressure tube (ram-recovery ratio, $\frac{H_1-p_0}{H_0-p_0}$).

bSt.indicates static-pressure tube (coefficient given as P).

TABLE 8.— PRESSURE COEFFICIENTS FOR THE AIRPLANE IN THE CLEAN CONDITION; $\alpha,\ 12.3^{\circ}$

(a) Wing root

Ori- ψ fice No.	-12	-8	6	4	-2	0 (. 2	4 ,	6	8	12
27 ^a 28 ^a 29 30 31 32 33 34 35 36 37	 -1.32 -0.94 76 66 61 50 43 33 22			-1.28 -1.03	1.38 1.09 1.05 1.88 1.68 1.59 1.46	-1.46 -1.15 -1.10 92 82 70	-1.51 -1.19 -1.13 95 84 71 63	-1.56 -1.21 -1.15 96 86 72	-1.63 -1.25 -1.19 99 88 74 65	-1.29 -1.21 -1.01 88 76 67 51	-1.76 -1.33 -1.24 -1.03 90 76 68 52

(b) Upper stabilizer root

Ori- V fice No.	-12	- -8	- 6	-1 1	-2	0	2	4	6	8	12
67 68 69 70 71 72 73 74 75 76	-0.04 15 37 38 48 54 04 16 06 85 12	-0.04 04 21 26 39 51 25 39 19 29	-0.04 01 15 21 36 52 29 33 29 13	-0.04 .02 09 18 33 53 37 38 44 .11	.05 05	-0.05 .08 03 04 56 56 53 77 .36	53 58 60	-0.03 .14 .00 13 29 57 56 68 -1.27 .44	-0.03 -0.04 04 13 31 63 61 79 -1.57 .28	-0.03 -07 -16 -35 -72 -75 -92 -1.85 .06	-0.04 -0.02 14 21 37 81 89 -1.13 -2.27 48 10

aPeak negative pressures exceeded limit of the manometers.



TABLE 8.- CONTINUED

(c) Lower stabilizer root

Ori- V fice No.	-12	8	- 6	-4	-2	0	2	14	6	8	12
78 79 80 81 82 83 84 85 86 87 88	0.02 04 13 07 07 36 34 20 28 15	0.03 05 16 10 12 36 34 .12 .18	0.03 06 18 13 15 37 34 .07 .10	0.04 07 19 13 16 37 34 .03 .05 .83	0.06 05 18 13 18 37 35 01 .00 .89	0.08 04 15 12 15 37 03 03 .90 1.00	0.11 01 13 10 14 34 04 04 .83	0.11 .00 12 09 13 34 04 04 74 04	32	0.11 .01 10 08 13 34 32 05 04 .69	0.11 .02 09 07 12 35 06 06 .68

(d) Fuselage and canopy

Ori- V	-12	-8	<u>-</u> 6	<u> </u>	-2	0	2	4	6	8	12
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	-0.37 22 44 51 54 54 56 04 23 44 -1.13 -1.21	44 44 47 42 43 14 08 28 49	42 45 44 43 .19 04 24 44	-0.61 -29 -39 -44 -42 -39 -35 -27 -01 -19 -89 -98 -78	-33 -41 -46 -42 -43 -40 -36 -27 -02 -17 -37 -87	-0.77 -34 -44 -42 -39 -34 -03 -15 -03 -15 -08 -17	-0.84 37 42 46 44 39 35 .21 .01 17 87 98 77	93 -44 -47 -45 -45 -36 -19 -48 -40 -48 -40 -40 -40 -40 -40 -40 -40 -40 -40 -40	04 22 43 91 -1.04	47 50 49 45 40 18 29 49 96 -1.09	63 52 57 55 54 50 46 .11 22 43 62 -1.07

TABLE 8.- CONTINUED

(d) Fuselage and canopy (Concluded)

1			,								
Ori-	-12	- 8	- 6	-4	-2 .	0	2	4	6	₿	js
fice No.											17.61
16	-0.85	-0.67	-0.62	-0.57	-0.56	-0.54	-0.56	-0.58	-0.63	-0.69	
17	82	63	68	52	50	47	50	52	57	63	81
18	.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		97
19	19	15	16	18	23	26	34	40	51	62	₩.87
20	25	 34	40	48	 57	65	78	88	-1.01	-1.14	
21	42	51	57	63	71	76	87	94	-1.03	-1.12	-1.58
22	44	49	 53	57	62	64	71	 75	80	85	
23 24	50	51	52	53	54	54	57	59	60	62 46	66
	 46 58	44 51	44 49	43 45	45 43	 42	44 38	44 37	45 35	40 35	49 35
25 26	10	08	07	07	 08	39 07	09	 09	09	11	11
39	.88	00 -79	.74	.65	54	42	.29	.17	01	17	 52
40	.52	.37	.29	.21	.11	.02	09	18	29	38	
41	•37	.24	.17	.10	.01	05	14	21	29	36	50
. 42	•26	.13	.06	.00	08	14	21	27	 34	40	52
43	.16	•04	03	09	17	22	29	35	40	46	 56
44	11	24	32	 39	47	 52	61	67	 73	79	88
45	.00	12	 19	25	32	35		47		57	64
46	13	24	30	34	41	43	49	 53			65
47	40	 53	61	66	74	77	85	88	93	96	-1.03
48	65	 78	84	91	97	-1.00		-1.11			-1.22
49 50	10	08	07	07	 08	07		09		11	11
51	•39 •25	.26 .12	.18	.10 01	.00 09	08 15	19 23	 26	 36 36	46 43	63 56
52	.15	.04	04	09	 15	 20	 28	 33	 34	45	5#
53	.08	04	10	16	22	 27	 34	 38	44	 48	 53
53 54	10	08	07	07	08	07	09	09	09	11	11
55	.56	.41	-31	.19	.05	08	24	 38	 56		-1.08
56	.22	.10	.02	06	16	23	 33	40	50	5 8	
57	.08	03	09	15	22	27	35	 39	46	52	62
58	•04	06	12	16	 23	27	 33	37	43	48	-,56
59	05	15	20	26	32	 35	41	46	50	54	- .62
60	13	22	27	33	 38	42	47	51	54	- 59	64
61	.96	.91	.89	.83	•76	.67	•57	42	-35	,22	07
62	.65	.51	• 44	•35	.26	.17	•06	02	13	23	43
63	•49	•37	•30	•23	.13	.07	02	08	17	25	 39
64 65	•35	.22	.14	.07	01	08	16	22	30	37	 50
66	.28 .16	.15	.07	.01	07	1 3	21	28	34	41	53
00	• 10	•03	04	11	19	24	 32	 37	44	49	60

Note: A line has been drawn through doubtful data.

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TABLE 8.- CONTINUED

(e) Fuselage duct

Ori- Ψ fice No.	12	-8	-6	4	-2	0	2	4	6	8	12
100 T.ª	0.88	0.89	0.95	0.96	0.97	0.97	0.96	0.94	0.93	0.91	0.87
101 T.	.91	•95	•97	.96	•99	•99	•97	.96	•94	•92	.86
102 T.	•97	•99	1.00	1.00	•99	.98	•99	.98	•97	•97	.91
103 Т.	•99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	•99	•99
104 T.	•93	•99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	•94
105 T.	-77	.89	.96	.96	.96	.96	.96	.96	.96	•95	.78
106 T.	•90	•90	.96	.96	•95	•95	•95	•94	•93	.92	.84
107 T.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.99	.88
108 т.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	•74
109 T.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.61
110 T.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	•57
111 T.	.91	.90	-94	.94	.94	-93	•93	.93	.92	.92	.57
112 St.b	.64	.72	.88	.88	.88	.88	.88	.88	.88	.86	.56
113 T.	.63	.63	.66	.66	.66	.66	.66	.65	.65	.62	.38
114 T.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	•99	•99	•95	•59
115 T.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.98	-57
116 T.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	•99	•57
117 T.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.98	-57
118 T.	.91	.90	•95	•95	.94	.94	•94	•93	-92	-95	•57
119 T.	•94	•92	•96	•95	•95	•95	•95	•95	•93	-88	•59
120 T.	.98	•97	•99	•97	•97	.96	•95	-94	-92	.88	•59
121 T.	.96	•97	1.00	1.00	1.00	1.00	•99	-95	.91	.88	•59
122 T.	.87	.92	1.00	1.00	1.00	1.00	1.00	•99	•95	.87	.58
123 T.	•73	.84	1.00	1.00	1.00	1.00	1.00	1.00	•99	.88	.58
124 T.	.65	•75	.91	.91	•90	•90	•90	•90	.89	.88	.58
125 T.	.02	•02	•03	.02	•03	•03	•03	•02	•03	.02	.01

aT. indicates total-pressure tube (ram-recovery ratio, $\frac{H_l - p_o}{H_o - p_o}$).

bSt. indicates static-pressure tube (coefficient given as P).

TABLE 8.- CONCLUDED

(e) Fuselage duct (Concluded)

Ori- W	-12	-8	- 6	<u>_1</u>	<u>-</u> 2	0	2	4	6	8	12
127 T. a 128 T. 129 T. 130 T. 131 T. 132 T. 134 T. 135 T. 136 T. 137 T. 138 T. 137 T. 140 T. 141 T. 142 T. 144 T. 145 T. 146 T. 147 T. 148 T. 147 T. 148 T. 150 T. 151 St.	0.61 .57 .55 .57 .57 .57 .57 .57 .57 .57 .57	0.69 .66 .65 .65 .65 .65 .65 .65 .65 .65 .65	0.95 .99 1.00 .96 .96 .98 1.00 .98 .96 .90 1.00 .97 1.00 .93 .97 1.00 1.00 .95 .87	0.94 .98 1.00 .90 .97 .98 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	0.94 .98 1.00 1.00 .97 .98 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	0.95 .97 1.00 1.00 .98 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	0.96 .97 1.00 1.00 .89 .97 .99 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0.96 .98 1.00 1.00 .99 1.00 1.00 1.00 1.00 1.00	0.96 .98 1.00 1.00 .99 .96 .99 1.00 1.00 .93 1.00 1.00 .93 .97 .99 .99 .99 .99	0.96 .99 .98 .96 .99 .90 .90 .90 .90 .90 .90 .90 .90 .90	0.63 .59 .56 .57 1.21 .98 .96 .84 .75 .61 .94 1.00 1.00 1.00 1.00 1.00

aT. indicates total-pressure tube (ram-recovery ratio, $\frac{H_l - p_o}{H_o - p_o}$).

bSt. indicates static-pressure tube (coefficient given as P).



TABLE 9.— PRESSURE COEFFICIENTS FOR THE AIRPLANE WITH THE SKYHOOK EXTENDED; ψ , O^{O}

(a) Wing root

α Ori- fice No.	-4.0	0.1	4.1	6.2	8,2	10.2	12.3	1.4.3
27 ^a 28 ^a 29 30 31 32 33 34 35 36 37 38	0.42 .21 .07 13 21 32 35 43 43 38 35 28	0.43 -,36 35 42 43 51 50 54 39 30	-0.30 -1.25 88 76 67 66 67 58 51 42 31	-0.90 -1.76 -1.17 92 79 81 72 71 61 54 43	,	1	-2.21 -1.48 -1.16 -1.11 94 86 70 62 48 34	-2.53 -1.63 -1.16 -1.16 -1.98 -1.92 -1.77 -1.69 -1.54 -1.40

(b) Upper stabilizer root

Ori- fice No.	-4 .0	0.1	4.1	6,2	8.2	10.2	12.3	14.3
67 68 69 70 71 72 73 74 75 76	0.32 .14 .15 .15 .15 .14 .14 .14 .03	0.25 .15 .15 .16 .15 .15 .15 .15	.0.21 .16 .16 .17 .16 .15 .15 .15 .15	0.19 .16 .16 .17 .16 .15 .15 .15 .26	0.17 .15 .15 .15 .16 .15 .15 .15 .15 .29	0.14 .14 .15 .15 .14 .14 .14 .14 .25	0.13 .13 .14 .14 .14 .13 .13 .13 10	0.10 .11 .12 .12 .12 .11 .11 .11 .11

Peak negative pressures exceeded limit of manometers for $\alpha = 12^{\circ}$.



TABLE 9.- CONTINUED

(c) Lower stabilizer root

ori- fice No.	4.0	0.1	4.1	6.2	8.2	10.2	12.3	14.3
78 79 80 81 82 83 84 85 86 87 88	0.10 .10 .11 .11 .11 .28 .11 .11	0.12 .12 .12 .13 .32 .19 .13 .12 .13	0.09 .09 .09 .10 .29 .11 .11	0.11 .10 .10 .09 .09 .28 .10 .08 .08 .07	0.13 .12 .11 .10 .27 .08 .11 .10	0.13 .13 .13 .12 .25 .05 .12 .12 .12	0.12 .12 .12 .12 .24 .03 .12 .12	0.11 .11 .10 .10 .23 .00 .11 .11

(d) Fuselage and canopy

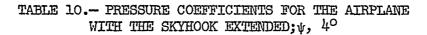
Ori- fice No.	-4 .0	0.1	4.1	6.2	8.2	10.2	12.3	14.3
1 2 3 4 5 6 7 8 9 10 11 12 13 14	-0.01 .04 .25 .14 .10 23 .04 26 17 02 09 31 45	0.01 .04 .25 .14 .10 23 .04 26 17 02 09 31 45	0.00 .00 05 13 13 13 31 32 21 01 22 44 54	0.00 .00 13 19 18 18 30 21 21 21 23 45 54	0.00 02 22 25 25 32 32 32 32 32 32 32 32	0.01 01 29 32 31 38 33 26 32 21 01 29 50	0.00 02 37 40 39 37 34 30 34 22 .00 32 53 61	0.00 03 44 45 45 35 35 35 35 55 63



TABLE 9.- CONCLUDED

(d) Fuselage and canopy (Concluded)

α Ori- fice No.	-4.0	0.1	4.1	6.2	8.2	10.2	12.3	14.3
15 16 17 18 19 20 1 22 23 4 5 26 99 41 4 4 4 4 4 4 9 5 5 5 5 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6	-0.42 -35 -34 -99 -29 -55 -24 -21 -38 -24 -116 -23 -116 -121 -16 -112 -18 -101 -112 -118 -101 -118 -101	-0.42 -0.35 -0.34 -0.7 -0.55 -0.7 -0.55 -0.39 -0.21 -0.12 -0.12 -0.12 -0.12 -0.12 -0.12 -0.13 -0.14 -0.08 -0 -0.08 -0.08 -0.08 -0.08 -0.08 -0.08 -0.08 -0.08 -0.08	04 38 59 54 45 39 31 13 .48 .11 .04 04 15	60 54 37 33 13 05 13 17 28 42 04 04 09	-0.52 43 41 43 62 57 50 39 36 13 07 01 08 16 20 30 33 55 80 13 08 13 09 17		64 59 51 41 38 13	



(a) Wing root

ori- fice No.	-4.0	0.1	4.1	6.2	8.2	10.2	12.2	14.3
27 ^a 28 ^a 29 30 31 32 33 3 ¹ 4 35 36 37 38	0.46 .06 04 21 27 37 39 41 45 39 36 28	0.24 63 53 54 59 56 56 53 48 41 31	-0.58 -1.51 -1.05 87 76 78 71 67 61 54 32	-1.28 -2.06 -1.34 -1.048788787872645745	-2.13 -2.64 -1.66 -1.21 99 84 76 59 46 33	-3.08 -3.22 -1.98 -1.38 -1.10 -1.06 90 69 61 46 34		-2.62 -1.69 -1.28 -1.21 -1.05 85 77 62 47

(b) Upper stabilizer root

Ori- fice No.	-4.0	0.1	4.1	6.2	8.2	10.2	12.2	14.3
67 68 69 70 71 72	0.29 .13 .14 .14 .14	0:22 .13 .13 .14 .14	0.16 .14 .14 .14 .15	0.13 .14 .14 .14 .14 .14	0.12 .13 .13 .13 .13	0.09 .12 .12 .12 .12	0.07 .10 .10 .10 .11	.08 .09 .09 .09
73 74 75 76 77	.13 .13 .13 .04	.13 .13 .13 .03	.14 .14 .14 01	.13 .14 .14 03	.13 .13 .13 04	.12 .12 .12 06	.10 .10 .10 10	.09 .09 .09 12

^aPeak negative pressures exceeded limit of manometers for α\$12°.

TABLE 10.- CONTINUED

(c) Lower stabilizer root

Ori- fice No.	-1 +.0	0.1	4.1	6.2	8.2	10.2	12,2	14.3
78 79 80 81 82 83	0.12 .12 .12 .12 .12	0.12 .12 .12 .12 .12	0.14 .14 .13 .13 .13	0.13 .13 .13 .13 .13	0.13 .13 .13 .12 .12	0.12 .12 .12 .12 .11	0.12 .12 .12 .11 .11	0.09 .09 .08 .07 .06
84 85 86 87 88	.13 .13 .13	.13 .13 .13 .13	.13 .13 .12	.03 .13 .13 .13	.01 .12 .11 .11	01 .11 .10 .09	.04 .10 .09 .09	.32 06 .07 .06 .05 1.00

(d) Fuselage and canopy

ori- fice No.	-4.0	0.1	4.1	6.2	8,2	10.2	12.2	14.3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	-0.01 .04 .25 .14 .10 .08 30 38 32 14 36 54 46 37	-0.01 .08 .00 05 05 33 13 41 39 01 59 52 41 41	-0.01 -0.07 -1.17 -1.16 -1.17 -1	000152322754420325678643	00000000000000000000000000000000000000	0.00 03 34 33 39 44 43 43 45 45	0.04 - 39 - 41 - 39 - 47 - 46 - 46 - 63 - 46 - 50 - 46	0.05 1.45 1.43 1.43 1.40 1.79 1.65 1.65 1.65 1.65 1.65 1.65 1.65 1.65





TABLE 10.- CONCLUDED

(d) Fuselage and canopy (Concluded)

ori- fice No.	-4.0	0.1	4.1	6.2	8.2	10.2	12.2	14.3
18 19 20 21 22 23 44 45 44 45 44 45 45 45 55 55 55 55 55	0.9814426255432014101622320618201320191914132530	00 23 48 58 46 36 17 15 22 41 17 15 16 17 16 17 16 17 16 17 16 17 16 17 17 16 17 17 18 17 19	0 3 1 5 5 5 9 9 9 1 1 2 3 3 3 4 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1.3505599934481139669775506444992844826333883067220 1.1000000000000000000000000000000000	6 개 4 6 5 8 9 8 8 3 3 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 - 1 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 -	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	1.00 0.38 0.50



TABLE 11.— PRESSURE COEFFICIENTS FOR THE AIRPLANE WITH THE SKYHOOK EXTENDED; ψ , $8^{\rm o}$

(a) Wing root

			(3) !!					
α Ori- fice No.	4.0	0.1	4.1	6.2	8.2	10,2	12.3	14.3
27 ^a 28 ^a 29 30 31 32 33 3 ⁴ 35 36 37	0.44 12 18 31 35 43 44 46 48 42 37 29	0.09 81 64 61 56 57 58 57 48 40 30	-0.95 -1.77 -1.20 96 81 83 68 61 54 43 32	-1.73 -2.36 -1.52 -1.14 95 94 82 75 65 45 34	-2.76 -3.02 -1.88 -1.33 -1.07 -1.04887968604634		 -2.57 -1.70 -1.31 -1.22 -1.02 89 75 67 50 37	 -2.76 -1.77 -1.33 -1.28 -1.12 -1.03 93 67 51

(b) Upper stabilizer root

Ori- fice No.	−₁·°0	0.1	4.1	6.2	8.2	10.2	12.3	1 ¹ !•3
67	<u>-0,01</u>	0.00	0.02	-0.02	-0.03	<u>-0⁺0₁</u>	-0.05	-0.05
68	.12	.12	.11	.11	.10	.09	.07	.05
69	.12	.12	.12	.12	.10	.09	.07	.06
70	.12	.12	.12	.12	.10	.09	.07	.06
71	.13	.13	.12	.12	,11	.10	.08	.07
72	.12	.13	.12	.12	.11	.10	.08	.06
73	.12	.13	.12	.12	.10	.09	.07	.06
74	.11	.13	.12	.12	,10	.09	.07	.06
75	.11	.13	.12	.11	.10	.09	.07	.05
76	.02	03	07	09	11	11	12	15
77	16	06	, .Ol	.06	, ,13	.17	.22	.27

aPeak negative pressures exceeded limit of manometers for \$\overline{5}\$100.

TABLE 11.- CONTINUED

(c) Lower stabilizer root

Ori- fice No.	—4 ∙ 0	0.1	4.1	6,2	8,2	10.2	12.3	14.3
78 79 80 81 82 83 84 85 86 87 88	0.12 .12 .11 .11 .11 .28 05 .11 .11 .10	0.12 .12 .12 .11 .27 04 .12 .11	0.11 .10 .10 .10 .25 05 .10 .09 .09	0.10 .10 .09 .09 .25 .08 .08 .08	0.10 .10 .09 .09 .25 06 .08 .08	0.11 .11 .10 .10 .25 06 .10 .09 .09	0.11 .10 .10 .09 .24 08 .09 .08 .08	0.06 .06 .05 .05 .23 10 .05 .05 .05

(d) Fuselage and canopy

Ori- fice No.	<u>-4.0</u>	0.1	4.1	6.2	8,2	10.2	12.3	14.3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	-0.02 .02 .09 .01 .01 42 55 55 55 61 48 48 48 47	51 49 98 14	-0.01 -1.18 -1.23 -1.59 -1.33 -1.59 -1.46 -1.75 -1.68 -1.59 -1.68 -1.59 -1.68 -1.59 -1.68 -1.59 -1.68 -1.59 -1.68 -1.59 -1.68 -1.59 -1.68	-0.02 -0.19 -0.19 -0.29	0.038 335 29 388 8 5 5 8 5 5 8 2 6 5 8 5 5 8 5 5 8 2 6 5 8 5 8 5 5 8 5 8 6 6 6 6 6 6 6 6 6 6	88 95 75 58 54	60 43 67 70 65 96 76 58	-0.01 -0.54 -0.55 -0.55 -0.55 -0.55 -0.65

Note: Lines have been drawn through doubtful data.

The second second second



TABLE 11.- CONCLUDED

(d) Fuselage and canopy (Concluded)

Ori- fice No.	-4.0	0.1	4.1	6.2	8.2	10.2	12.3	14.3
2 2 3 4 5 6 9 0 1 4 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	75 55 55 56 8 22 22 65 8 22 55 8 23 55 75 23 23 24 55 75 25 25 25 25 25 25 25 25 25 25 25 25 25	であり、38 25 8 8 25 8 3 5 4 4 7 7 5 5 5 8 8 2 5 4 4 8 8 2 2 2 3 8 2 5 4 2 8 8 2 5 4 2 8 8 2 8 2 8 3 8 8 8 8 5 4 2 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	-0.520 -1.306 -1	や 6544 3357 332 333 4448 835 355 55 544 444 548 84 23 35 44 54 54 54 54 54 54 54 54 54 54 54 54	34 41 42 50 48 72 96 14 38		7.65423573646887688055537527582457458 	38 43 49 51 60 65 -1.07 -1.23 19 47 47



TABLE 12.— PRESSURE COEFFICIENTS FOR THE AIRPLANE WITH THE SKYFOOK EXTENDED; α , 0.1 $^{\circ}$

(a) Wing root

Ori- fice No:	1 5	-8	6	4	- 2	0	2	14	6	8	12
27 28 29 30 31 32 33 34 35 36 37 38	0.60 .26 .13 05 14 23 27 34 33 28 26 20	0.59 .05 05 19 25 34 37 41 36 32 24	0.56 11 16 28 32 41 42 47 45 39 34 27	0.52 -17 -22 -32 -35 -44 -45 -45 -45 -36 -38	48 42	0.41 41 47 45 51 51 45 38 39	58 55 60 54 48	54 55 52	0.13 76 61 661 56 62 59 62 55 49 41 31	79 63 61	-0.28 -1.16 84 65 69 63 65 56 50 40 30

(b) Upper stabilizer root

67	Ori- fice No.	-1 2	-8	 6	<u>-4</u>	2	0	2	4	б	8	12
	68 69 70 71 72 73 74 75 76	.13 .13 .13 .12 .12 .12 .12	.13 .14 .14 .14 .13 .13 .13	.13 .14 .14 .13 .12 .12 .12	.13 .14 .14 .13 .13 .13	.14 .15 .15 .15 .14 .14 .14 .14	.15 .16 .16 .16 .15 .15	.14 .15 .15 .15 .14 .14	.13 .13 .13 .13 .12 .12 .12	.13 .13 .14 .13 .13 .13 .13	.13 .13 .13 .13 .12 .12 .12	.12 .12 .13 .12 .12 .12 .11

TABLE 12.- CONTINUED

(c) Lower stabilizer root

Ori- fice No.	-12	-8	- -6	- 4	2	0	2	Ľį	6	8	12
78 79 80 81 82 83	0.02 .02 .02 .02 .02	0.06 .06 .06 .06	0.07 .07 .07 .08 .08	0.09 .09 .09 .09 .09	0.10 .10 .11 .11	0.12 .12 .13 .13	0.13 .14 .14 .14 .15	0.11 .11 .11 .11	0.14 .13 .13 .12 .12	0.13 .13 .13 .12 .12	-0.07 .07 .07 .06 .06
84 85 86 87 88	.02 .02 .03	.04 .06 .06	.05 .08 .08 .08	.08 .10 .10 .10	.11 .11 .11 .11	.15 .13 .13 .13	.01 .15 .15 .15	.00 .12 .12 .12 .1.00	.00 .12 .12 .11 -1.00	.01 .12 .12 .12	01 .06 .06 .06

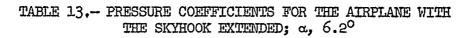
(d) Fuselage and canopy

Ori- fice No.	-12	- -8	6	- 4	2	0	2	4	6	8	12
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	.04 08 08 10 -2.21 38 90 78 .00 66 87 65	.03 .07 04 05 85 64 54 58 83 67 53 51	01 02 07 04 05 05 05 05 05 05 05 05 05 05 05 05 05	-0.01 -0.02 -0.03 -0.03 -0.03 -0.03 -0.03 -0.03 -0.04	-0.01 .03 .12 .01 .01 39 10 37 33 20 40 40 49 49 49	-0.01 00 00 00 00 00 00 00 00 00 00 00 00 0	.00 .08 .00 03 05 28 08 32 29 02 20 39 55 40 39	-0.02 .00 .08 01 06 35 14 42 39 02 18 42 60 53 42	.00 .07 .07 .07 .45 .55 .24 .54 .57 .43	-0.02 00.07 -0.05 -0.09 -0	-0.01 03 14 21 18 73 36 83 72 01 63 92 77 64 59
10	96	•99	:99	1.00	1.00	1.00	1.00	1.00	1.00	-98	94

TABLE 12.- CONCLUDED

(d) Fuselage and canopy (Concluded)

Ori- fice No.	-1 2	-8	- 6	4	-2	0	2	Įį.	6	8	12
20 21 22 23 24 25	09 30 31 33 29	0 20 1 3 3 7 0 3 3 9 8 4 3 5 5 6 0 0 0 4 4 9 9 3 2 6 9 8 4 7 6 2 4 5 5 7 7 3 3 5 6	0.13 -24 -47 -43 -143 -143 -143 -143 -143 -143 -143	0.14 28 516 40 310 1206 1206 1206 1206 1206 1206 1308 1206 1	0.14 0.30 53 40 21 03 21 03 21 03 21 03 21 03 21 03 21 03 21 03 03 03 03 03 03 03 03	0.32 0.32	0.17 -0.17 -0.155 -0.161 -0.17 -0.161 -0.17 -0.161 -0.17 -0.161 -0.17 -0.161 -0.17 -0.161 -0.17 -0.161 -0.17 -0.161 -0.17 -0.17 -0.161 -0.17 -0.161 -0.17 -0.161 -0	0.24 -0.44 -0.58 -0.47 -0.17 -0.16 -0.17 -0.	26 5 7 2 3 3 9 6 1 8 8 3 8 9 8 5 7 6 5 0 5 4 1 9 5 5 8 8 7 4 8 3 4 1 5 0 2 8 6 0 5 4 1 2 9 5 8 8 7 4 8 3 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.18 76 76	下4556475555554444458865544455525454844444444444



(a) Wing root

Ori- fice No.	-12	8	6	24	-2	0	2	4	6	8	12
27 28 29 30 31 32 33 34 35 36 37 38	0.19 73 55 47 50 50 45 39 33 24	-0.14 -1.09 65 59 560 51 37 36	-1.18	-1.41 -,96 79 69 67 68	-1.58 -1.06 86 74 77 70 59 52	-0.90 -1.76 -1.17 92 79 81 73 54 54 31	-1.89 -1.25 98 83 76 75 63	-2.13 -1.38 -1.05 88 78 62 55 45	-2.22 -1.44	-2.42 -1.55 -1.15 96 82 65 58 45	-2.45 -2.81 -1.76 -1.27 -1.04 -1.00 85 81 66 59 45 34

(b) Upper stabilizer root

75	ψ Ori- fice No.	12	-8	6	- -}t	 2	0	2	ĵţ.	6	8	12
	68 69 70 71 72 73 74 75	.11 .11 .11 .10 .10	.13 .13 .13 .12 .12 .12	.10 .10 .10 .09 .08 .08	.11 .11 .12 .11 .10 .10	.14 .15 .15 .16 .15 .14 .14	.16 .16 .16 .16 .15 .15	.14 .14 .15 .14 .14 .14	.14 .14 .14 .14 .14 .14	.12 .12 .11 .11 .12 .12 .12	.10 .11 .12 .12 .11 .11 .10	.10 .10 .10 .10 .10 .09



TABLE 13.- CONTINUED

(c) Lower stabilizer root

Ori- fice No.	-12	- 8	-6	<u>-</u> -} ₊	-2	0	2	4	6	8	12
78 79 80 81 82 83 84 85	0.01 .02 .02 .02 .02 .14 07	0.05 .05 .05 .05 .05 .05	0.06 .06 .06 .06 .06 .06	0.09 .09 .09 .09 .09 .09	0.06 .06 .05 .05 .05 .05 .08	0.09 .09 .08 .07 .07 .33 .17 .08	0.14 .14 .14 .13 .09	0.14 .14 .13 .12 .12 -07	0.12 .11 .10 .09 .13	0.09 .09 .08 .08 .07 .12	0.06 .06 .05 .05 .22
87 88	.01	.04 1.00	.06 -1.00	.09 1:00	.06 1.00	.06 1.00	.13 .12 -1.00	.12 .12 1.00	.09 .08	.07 .07 1.00	.05 .05

(d) Fuselage and canopy

Ori- fice No.	-12	-8	- 6	<u>,</u>	-2	0	, 2 ,	4	6	8	12
8 9 10 11 12 13	-0.01 .00 -18 -27 -26 -27 -1.90 -51 -88 -92 -01 -82 -1.05 71	0.00 .01 14 22 20 21 96 41 69 67 .00 59 88 91 73 57	0.00 .01 13 20 17 19 70 35 62 54 .00 40 67 76 62 48	0.01 .00 -13 -19 -17 -18 55 -32 -53 47 01 33 56 67 58 46	0.00 .00 .13 .20 .18 .19 .42 .26 .43 .34 .54 .54 .54 .54	0.00 -00 -13 -20 -19 -19 -31 -21 -33 -21 -00 -24 -46 -55 -50 -42	-0.01 01 14 21 20 32 36 29 01 35 52 64 55 45	0.00 01 15 21 22 37 25 44 42 00 51 56 56	0.00 01 17 23 25 23 49 31 57 52 .00 34 60 73 62 47	01 20 26 30 27 61 37 69 66 .00 53 79	-0.01 03 27 35 35 35 82 47 86 84 01 79 97 97 69

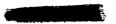


TABLE 13.- CONCLUDED

(d) Fuselage and canopy (Concluded)

Ori- fice No.	<u>-12</u> l	-8	<u></u> 6	<u> </u>	- 2	0	2	4	6	8	12
17	-0. 68		-0.46	-0.43	-0.42	-0,38	-0.42	-0.42	-0.45	-0.52	-0.66
18 19	99 17	05	1.00 .02	1,00 .02	02	09	 26	 32	37	1:00 40	-,96 -,85
20	20	28	30	34	37	40	44	49	57	62	 75
21	39	49	 51	56	 58	60	62	63	70	76	81
22	40	46	47	50	53	54 46	56	57	-,61	 66	71
23	45	46	45	46	46	,46	48	48	 50	52	61
24 25	40 50	 39 43	37 39	37 37	37 35	37 33	 38	38 31	39 31	41 32	46 38
25 26	17	14	 13	14	 13	 13	14	 13	13	14	 15
39	.97	.87	.80	.71	.60	.46	•33	.19	.02	17	56
40	.61	.46	.38	.29	.20	.09	01	11	21	32	55
41	.46	•32	.26	•17	.10	.03	06	 13	20	 29	45
42	•34	.22	.16	.08	.02	05	 13	1 9	25	32	46
43 44	.25 .19	.13	.07	.00 05	06 11	13 17	20 23	 25 28	31 34	38 40	50 51
	.07	04	08	15	21	26	 32	 37	41	40 47	 59
45 46	01	10	13	20	24	28	32	36	38	-,47 -,43	50
47	11	10 22	25	32	37	28 42	47	51	54	59 84	68
48	35	47	50	57	62	67	71	76	79	84	92
49	17	14	13	14	12	13	14	13	13	14	15
50 51	54	.40	-32	.23	.13	.04	,05	13	23	34	55
51 52	.38 .28	.24 .16	.19	.10	.03 03	04 09	13 16	20 21	25 28	34 35	50 48
53	.20	.08	•03	05	10	16	 23	28	 33	40	 50
53 54	17	14	13	14	13	13	14	13	13	14	15
55 5 6	.78	.64	.56	-45	.32	.20	.05	10	25	43	15 81
56	,43	.30	-23	.14	.05	03	13	21	30	41	59
57 58	.26	.14	.08	.01	05	13	20	26	32	40	55
	.21	.11	.06	01 10	06 16	12 21	18 28	23 32	 29	35 43	47 55
59 60	.04	07	11	18	23	28	33	 37	 43	48	57
61	1.00	94	.88	.81	.72	.62	.50	.38	25	.09	24
62	.66	.52	.45	.36	.27	.17	07	02	13	23	45
63	.51	•39	.32	.24	,18	.10	02	05	13	22	38
64	.38	.25	.19	.12	.04	03	10	17	24	32	45
65 66	.29	.18	.12	.05	02	09	16	21	29	35	48
1 00	.19	.07	.02	05	12	18	24	29	 36	40	 54



TABLE 14.— PRESSURE COEFFICIENT FOR THE AIRPLANE WITH THE SKYHOOK EXTENDED; α , 12.30

(a) Wing root

Ori- fice No.	-12	- 8	- 6	4	- 2	0	2	4	6	8	12
27 ^a 28 ^a 29 30 31 32 33 34 35 36 37 38	-1.69 -2.25 -1.36 96 79 68 67 51 44 34 23	-2.68 -1.63	-1.79 -1.23 98	-1.30 -1.04 -1.00 85 81	-2.05 -1.38 -1.10 -1.05 89 67 59 45	-1.47 -1.16 -1.10 94 87 71	-1.53 -1.20 -1.14	-1.61 -1.25 -1.17 .98 90 74 66	-1.65 -1.28 -1.20 -1.01 92	-1.72 -1.32 -1.24 -1.04 94	-1.36 -1.27 -1.07

(b) Upper stabilizer root

Ori- fice No.	-12	-8	6	4	-2	0	2	4	6	8	12
67 68 69 70 71	.06 .06 .06	.09 .10 .10	.08 .09 .09	-0.10 .10 .11 .11	.13 .14 .14 .14	.14 .14 .15 .15	.12 .12 .12 .12	.10 .10 .10	.07 .08 .08	.06 .07 .07	-0.04 .05 .05 .05
72 73 74 75 76 77	.05 .05 .05 .04 20	.10 .09 .09 .09 09	.09 .09 .08 .08 09	.11 .10 .10 .10 08	.14 .13 .13 .12 08	.14 .14 .14 .14 10	.12 .11 .12 .12 06	.10 .10 .10 .10 10	.08 .08 .08 .08 12	.07 .06 .06 .06 14	.05 .05 .05 .04 19

^aPeak negative pressures exceeded limits of manometers for $\psi \stackrel{>}{>} -2^0$.





TABLE 14.- CONTINUED

(c) Lower stabilizer root

Ori- fice No.	-12	-8	 6	- 4	- 2	0	2	4	6.	8	12
78 79 80 81 82 83	-0.05 05 05 05 05	0.04 .04 .04 .04 .04	0.04 .04 .04 .04 .04	0.06 .06 .06 .06	0.08 .08 .08 .07 .07	0.13 .13 .13 .13	0.13 .13 .12 .12 .11	0.12 .12 .11 .11 .10	0.10 .10 .09 .09 .09	.09 .09 .08 .08	0.05 .05 .05 .05
84 85 86 87 88	1\frac{1}{0\frac{1}{4}}0\frac{1}{4}0\frac{1}{4}0\frac{1}{4}	09 .04 .04 .04 .04	.03 .03 .03	.06 .06 .06 .06	.10 .08 .08 .08	.12 .12 .12 .12	09 .12 .11 .10	09 .10 .09 .09	11 .09 .08 .08	12 .08 .07 .07	.04 .04 .04 .04



TABLE 14.- CONTINUED

(d) Fuselage and canopy

1											
Ori- fice No.	-12	_8	- 6	<u>_l</u> t	- 2	0	2	4	6	8	15
1	0.00	0.00	0.01	0,00	0.00	-0.01	0.00	0,00	0.00	0.00	0.00
2	02	02	01	02	02	 03	 03	 03	04	 03	08
2	40	 37	 35	 35	 36	 26	 38	40	42	 47	 53
3	44	41	 40	40	40	 39	41	44	 46	49	
4 5	 42	 37	 40	 36	 37	 38	40	42	 43	 48	57 56
3 4 5 6	 43	 38	-,37	 35	 36	 37	20	40	41	45	, JU
7	-1.51	94	 36	 52	-,42	 35	38 37	42	 41	 59	54 80
7 8	 59	 48	 42	 37	 33	 30	32	34	 39	 43	 52
	89		 42				32	 34 46	 39	 45	87
9 10		71 70		 50	 40	 35	 38	 46	 56		
11	-1.06	72	 57	47 .00	34 .01	23	-,28	-,40	-, 58	 69	91
12	.00 87	.00	.01			.00	.00	.00 48	.00	.00	•00
	-1.11	62	 52	 45	43	 32	41	,40	 53	 65	88
13 14		,90	 76	68	 66	54	 63	-:68	 76	92	
	-1.09	94	81	74	71	62	71	77	84	97	-1.11
15 16	88	 75	 66	62	-,59	55	 59	 63	68	 76	88
	70	58	52	48	47	 45	48	 50	 52	 59	70
17	65	 53	48	45	44	-,41	44	46	49	54	65
18	99	1.00	1,00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	•97
19	27	17	13	11	13	20	30	38	;32	46	77
20	 28	 35	-:36	40	43	-: 47	49	50	56	59	-,65
21	,44	- • 53	55	59	62	65	66	67	70	-:73	75
22	45	50	52	 55	 56	 59	~. 59	60	62	65	-:67
23	51	52	51	51	52	52	51	51	52	54	-,58
24	-,47	, 45	43	42	-,42	42	41	41	41	,43	46
25	56	50	45	43	41	 38	36	34	34	35 16	39
26	15	15	 13	13	-:13	14	14	-:14	15	16	18
39	.89	.80	.75	.66	.56	.43	.29	.15	01	26	52
40	•53	.38	.30	.21	.12	.01	 09	19	29	39	59
41	-39	.24	.17	.10	.03	.06	14	22	29	36	51
42	.27	.13	.06	.00	07	15	22	28	34	41	 53
43	.17	.04	03	09	15	23	30	35	41	46	57
44	.14	.00	06	1 3	19	26	32	 38	43	49	58
45	.01	13	 19	25	21	 37	43	48	53	57	65
46	13	25	30	35	40	45	50	54	 58	-,62	66
47	42	55	62	 68	 75	81	86	 93	95	-1.00	-1.06
48	67	80	 86	92	07	-1.05	-1.09	-1.14	-1.17	-1.21	-1.25
49	 15	15	-1.04	13	 13	14	 14	14	 15	16	18



TABLE 14.- CONCLUDED

(d) Fuselage and canopy (Concluded)

Ori- fice No.	-12	-8	_ 6	-4	-2	0	2	14	6	8	. 12
50 51 52 53 54 55 57 58 59 61 62 63 64 65 66	0.40 .26 .16 .08 14 .57 .23 .09 .05 12 .98 .67 .51 .36 .29	0.26 .13 .04 04 15 .10 03 16 22 .93 .51 .21 .15 .03	0.18 .06 03 10 13 .32 .03 08 11 20 27 .90 .45 .07 05	0.10 10 09 15 13 .20 05 15 25 32 .84 .35 .23 .07 .01	08 15 22 13 .06 14 21	-0.09 -1.15 -2.28 -1.4 -2.8 -2.4 -2.8 -3.6 -3.6 -3.6 -3.6 -3.6 -3.6 -3.6 -3.6	23 27 34 14 23 32	12 41 41	36 39 44 55 42 55 42 55 14 17 31	45 49 16 74 58	55 58 18 -1.08



FIGURE LEGENDS

- Figure 1.- Direction of positive angular displacements and stream velocity.
- Figure 2.- Three-view drawing of the McDonnell XP-85 airplane.
- Figure 3.— Three-quarter front view of the installation of the McDonnell XP-85 airplane in the Ames 40- by 80-foot wind tunnel. (a) Clean condition.
- Figure 3.- Concluded. McDonnell XP-85 simplane. (b) Skyhook extended.
- Figure 4.- Location of the pressure orifices on the airplane and in the fuselage duct.



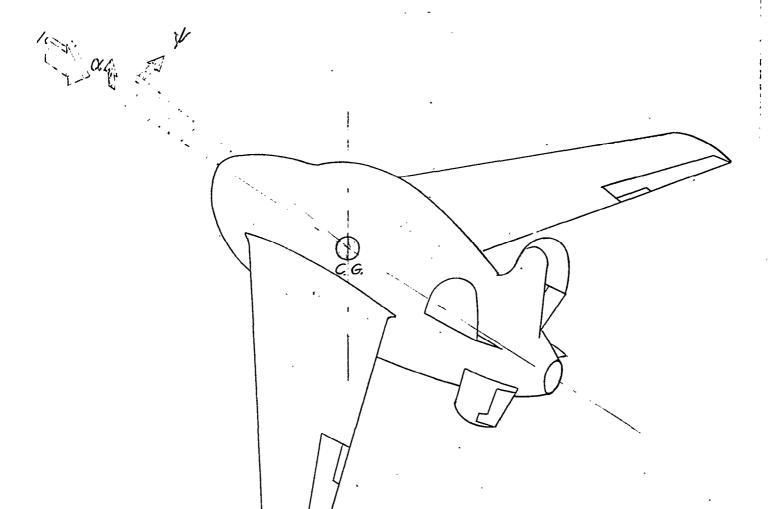


FIGURE 1.- DIRECTION OF POSITIVE ANGULAR DISPLACEMENTS AND STREAM VELOCITY.

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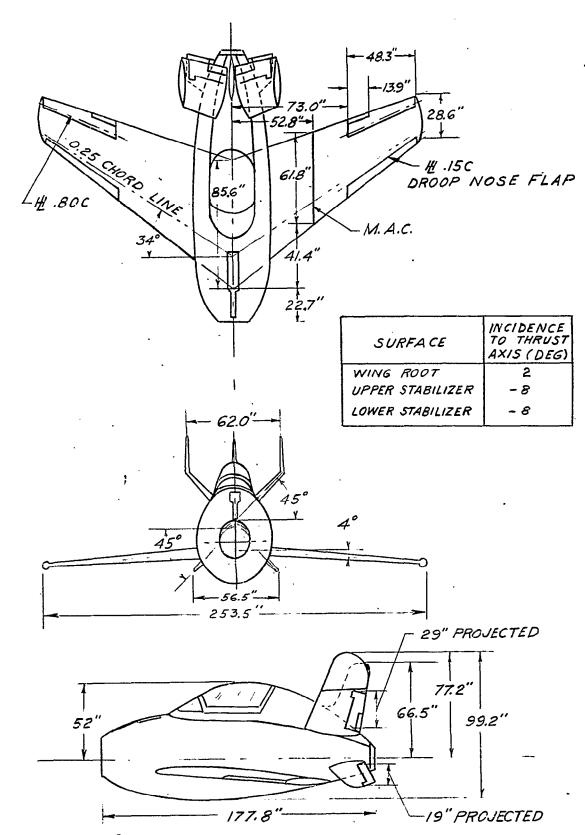
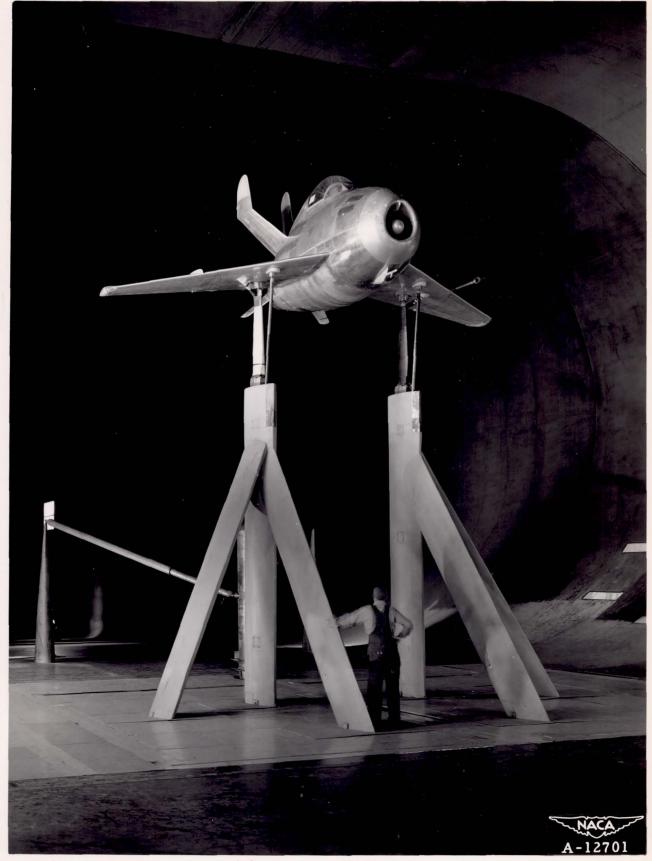


FIGURE 2.- THREE-VIEW DRAWING OF THE MCDONNELL XP-85 AIRPLANE.



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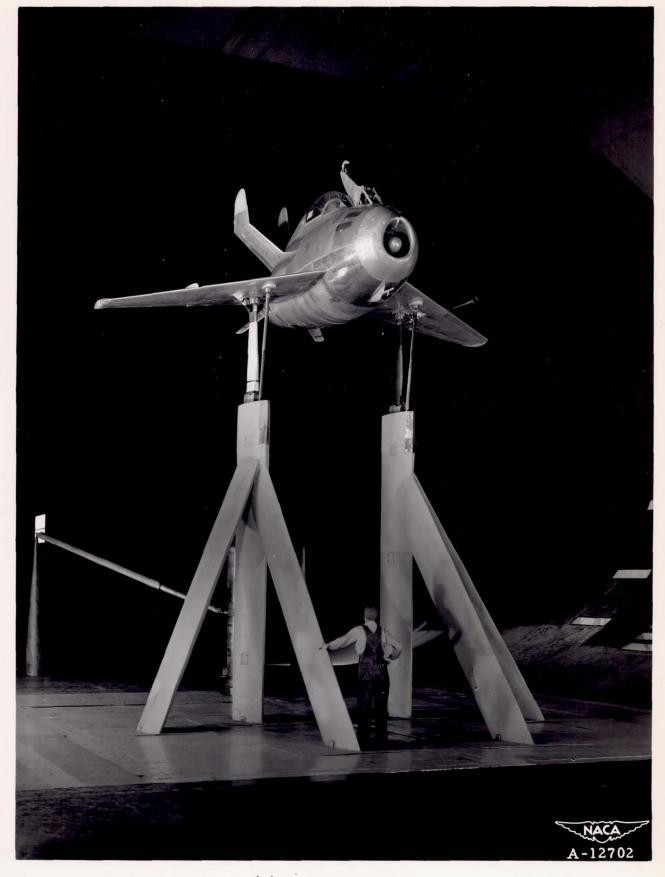


(a) Clean condition.

Figure 3.- Three-quarter front view of the installation of the McDonnell XP-85 airplane in the Ames 40- by 80-foot wind tunnel.

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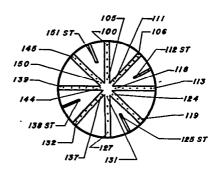


(b) Skyhook extended.

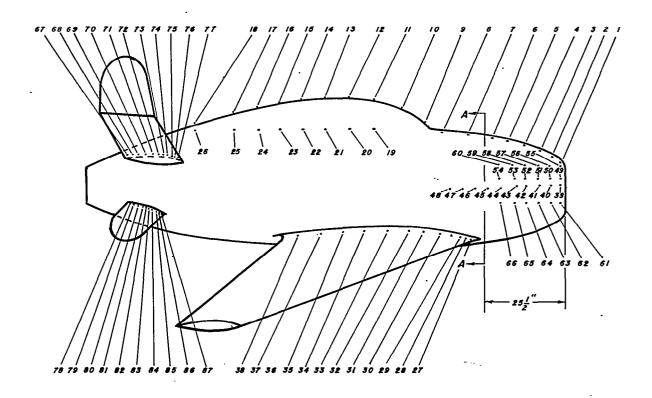
Figure 3.- Concluded.

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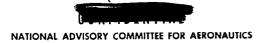


Section "A-A "
Fuselage Duct



Note: All orifices on the wing and stabilizers are on the upper surfaces only.

Figure 4 .- Location of the pressure orifices on the airplane and in the fuselage duct.





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